

# Exhibit 52

Deposition of Hal J. Singer, Ph.D.  
(September 27, 2017) (excerpted)

**PUBLIC COPY - REDACTED**

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF NEVADA

- - -

IN RE: : Civil Action  
: DOCKET NO.  
CUNG LE, NATHAN QUARRY, : 2:15-cv-01045-RFB-  
JON FITCH, BRANDON VERA, : (PAL)  
LUIS JAVIER VAZQUEZ and :  
KYLE KINGSBURG, on behalf : CLASS ACTION  
of themselves and all :  
others similarly :  
situated, :  
:   
Plaintiffs, :  
:   
v. :  
:   
ZUFFA, LLC, d/b/a :  
ULTIMATE FIGHTING :  
CHAMPIONSHIP and UFC, :  
:   
Defendants. :

- - -

Wednesday, September 27, 2017

- - -

Videotaped deposition of  
HAL J. SINGER, Ph.D., taken pursuant to  
notice, was held at the law offices of  
Berger & Montague, P.C., 1622 Locust  
Street, Philadelphia, Pennsylvania 19103,  
beginning at 9:24 AM, on the above date,  
before Constance S. Kent, a Certified  
Court Reporter, Registered Professional  
Reporter, Certified LiveNote Reporter, and  
Notary Public in and for the Commonwealth  
of Pennsylvania.

\* \* \*

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1 opposed to as a percentage of revenue?

2 MR. CRAMER: Objection to  
3 form, to generally. For what  
4 purpose?

5 THE WITNESS: A firm could,  
6 if a firm bills -- if a law firm  
7 bills an associate out at \$400 an  
8 hour, it could express what the --  
9 what the young lawyer's salary on  
10 an hourly basis is as a -- under  
11 an assumed utilization rate as a  
12 percentage of that young lawyer's  
13 bill rate.

14 BY MR. ISAACSON:

15 Q. And are you aware of any  
16 studies which express the marginal  
17 revenue product of labor in terms of the  
18 percentage of revenue of the firm?

19 A. I'm not aware, but as you've  
20 expressed it, that's not quite what I'm  
21 doing either.

22 Q. Now, in terms of -- did you  
23 make any effort to measure the marginal  
24 revenue product of labor of UFC fighters?

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1 A. Yes.

2 Q. Okay. And what would you  
3 point to me for that?

4 A. What I did, which is I -- I  
5 calculated the average revenue per event,  
6 per fighter, and I'm using that as a  
7 proxy for the marginal revenue product.

8 Q. All right. If the  
9 average -- when you look at the average  
10 revenue per event, per fighter, how do  
11 you determine what part of that revenue  
12 is the contribution of the fighter as  
13 opposed to, for example, marketing,  
14 promotions, production or the work of the  
15 overall firm?

16 A. So for my purposes, I don't  
17 need to figure out that -- that  
18 decomposition. I will note, however,  
19 that I cite a study in my literature  
20 review section that suggests that the  
21 fighter is responsible for, if not all,  
22 the vast majority of -- of the  
23 pay-per-view revenues that are captured  
24 and not the brand.

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1 Q. Well, I didn't ask about the  
2 brand.

3 The -- you would agree --  
4 you would agree with me that effective  
5 marketing and promotion could increase  
6 the average revenue per event, correct?

7 A. Yes.

8 Q. And you would agree with me  
9 that super- -- improving television  
10 production can increase the average  
11 revenue per event?

12 MR. CRAMER: All things  
13 equal?

14 MR. ISAACSON: Yes.

15 THE WITNESS: I'm not sure  
16 what -- what you mean by improving  
17 television production.

18 BY MR. ISAACSON:

19 Q. A better production that  
20 people enjoy more.

21 MR. CRAMER: Objection to  
22 form.

23 THE WITNESS: And you're  
24 asking me if I can conceive of

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1 this as a matter of theory?

2 BY MR. ISAACSON:

3 Q. Yes.

4 A. As opposed to whether it  
5 actually happened?

6 Q. Yes.

7 A. I think I'm -- I'm going to  
8 grant you that as a matter of theory one  
9 could -- one could add value by  
10 increasing the quality of the production.

11 Q. Okay. Now, in this case,  
12 you did not do an actual study yourself  
13 of the contribution of the UFC fighters  
14 to the average revenue per event; is that  
15 right?

16 MR. CRAMER: Asked and  
17 answered.

18 THE WITNESS: I think that's  
19 correct. As I noted a few moments  
20 ago, that was not necessary for my  
21 purposes.

22 BY MR. ISAACSON:

23 Q. By using the average revenue  
24 per event, per fighter as a proxy, were

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1 you using that as a proxy for the  
2 marginal revenue product of that labor?

3 A. Yes.

4 Q. Okay. And you were assuming  
5 that all of that average revenue per  
6 event, per fighter was the product of  
7 that labor as opposed to some other  
8 source?

9 MR. CRAMER: Form.

10 THE WITNESS: No, I don't  
11 think I'm assuming that.

12 BY MR. ISAACSON:

13 Q. When -- when you look at  
14 average revenue -- I'm sorry. When you  
15 ordinarily look at the marginal revenue  
16 product of labor, do you talk about  
17 everybody who works in the firm including  
18 management?

19 MR. CRAMER: Objection to  
20 form.

21 THE WITNESS: If -- if this  
22 were some other case and you were  
23 interested in computing the  
24 marginal revenue product of

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1 management, you might -- you might  
2 be interested in that. But that  
3 wasn't what I was trying to do  
4 here.

5 BY MR. ISAACSON:

6 Q. All right. Here, have you  
7 attempted to actually estimate the  
8 marginal revenue product of the fighter  
9 portion of the labor force of the UFC?

10 MR. CRAMER: Objection to  
11 form.

12 THE WITNESS: I think you're  
13 getting at the same question now,  
14 just asked in a different way  
15 which is have I done a  
16 decomposition of the marginal  
17 revenue product between the  
18 fighters and -- and Zuffa, and the  
19 answer is no, I have not done that  
20 decomposition.

21 BY MR. ISAACSON:

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4 Q. You, yourself, have not  
5 looked at the levels of pay over time  
6 paid to Zuffa's fighters other than  
7 looking at this study?

8 MR. CRAMER: Objection to  
9 form.

10 THE WITNESS: So I wouldn't  
11 put it that way.

12 BY MR. ISAACSON:

13 Q. How would you put it?

14 A. I am absolutely looking at  
15 their pay over time in the sense that I'm  
16 recording their pay as the numerator of  
17 my dependent variable. So to suggest  
18 that I'm not looking at their -- their  
19 pay is erroneous.

20 Q. All right. The -- was there  
21 a period where the average revenue per  
22 event in UFC had -- have you looked at  
23 any periods where there were abrupt jumps  
24 in that?

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1 studied that and I imagine for someone  
2 who lives very far from the venue where  
3 the live event is staged, they would not  
4 be considered reasonably close  
5 substitutes.

6 Q. So for your input markets,  
7 what evidence did you take into account  
8 to assess customer's likely response to  
9 price increase in the SSNIP analysis?  
10 And feel free to point me to the sections  
11 of your report that --

12 A. Did you mean to say -- I  
13 think you just conflated the input  
14 markets and customers. Maybe we should  
15 start over.

16 Q. Yes, I said price increase  
17 rather than wage decrease, but let me  
18 just put it this way: What evidence in  
19 your report did you take into account to  
20 assess the likely response to a SSNIP in  
21 the input markets?

22 A. Sure. So there it's the  
23 perspective of the fighters not the  
24 customers. So I was tripping up over

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1 your --

2 Q. Yes.

3 A. -- injecting customers when  
4 we're talking about input markets.

5 So I can take you to the  
6 relevant sections, and I will, but of  
7 course at high levels, I'm looking at  
8 record evidence of -- of what fighters  
9 and promoters thought about substitution  
10 possibilities as you -- if you were to  
11 move away from Zuffa to counteract a  
12 hypothetical wage cut.

13 Q. Okay. So the first thing  
14 you looked at was record evidence of  
15 substitution.

16 A. Or the perception of  
17 substitution from the stakeholders, the  
18 fighters, the promoters, and I'll just  
19 point you, if you --

20 Q. That's -- that's sufficient  
21 for -- for item 1.

22 MR. CRAMER: You asked him  
23 to look at his report.

24 MR. ISAACSON: I'm going

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1 to --

2 MR. CRAMER: Okay.

3 MR. ISAACSON: I'm not going  
4 to ask him to recite all the  
5 documentary evidence.

6 BY MR. ISAACSON:

7 Q. And I understand that  
8 there's documentary evidence that you're  
9 not reciting today.

10 Okay. Other than the record  
11 evidence of the -- about sub- --  
12 perceptions of substitutability from the  
13 stakeholders, what would be other parts  
14 of your SSNIP analysis for the input  
15 market?

16 A. I would direct you to  
17 Section 3A 1 for all of the evidence that  
18 I used to inform the construction of the  
19 relevant input market.

20 Q. That would be the record  
21 evidence that you were referring to?

22 A. Well, record evidence is  
23 fairly broad, right, because it  
24 encompasses almost everything. But I

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1 will point -- to me the -- what helps to  
2 guide me to the findings that I made with  
3 respect to the input market was the fact  
4 that Zuffa was able to successfully  
5 suppress fighter wages, wages either  
6 measured by -- by wage share, regression  
7 or by knowledge of the fact that wage  
8 shares were falling over time from  
9 26 percent to 18 percent, yet Zuffa did  
10 not suffer sufficient defection so as to  
11 render that wage decrease unprofitable.

12 Now, that -- that tells you,  
13 as a matter of economics, that a -- that  
14 a reasonable starting place for defining  
15 the contours of the relevant input market  
16 is just the fighters under Zuffa's  
17 control. That was the -- the first thing  
18 that occurred to me.

19 And once you -- once you  
20 start there, you can start looking at  
21 record evidence to determine whether  
22 additional fighters from -- from rival  
23 promotions ought to be included so that  
24 you eventually get to the smallest set of

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1 fighters such that a hypothetical  
2 monopsonist could profitably exercise  
3 monopsony power.

4 Q. All right. And you said  
5 that Zuffa was able to successfully  
6 suppress fighter wages -- wage share.  
7 You were talking only about the share of  
8 revenues there, correct?

9 A. Correct.

[REDACTED]

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5 BY MR. ISAACSON:

6 Q. All right. But in your --  
7 in your hypothetical there you held  
8 revenues constant. Did you look at, as  
9 part of your analysis of the input market  
10 and defining that market, as to whether  
11 Zuffa actually suppressed actual wages?

12 MR. CRAMER: Objection to  
13 form.

14 BY MR. ISAACSON:

15 Q. As opposed to wage share?

16 MR. CRAMER: Same objection.

17 THE WITNESS: I'm focused on  
18 wage share, of course, because  
19 it's the right thing to look at  
20 from an economic perspective.  
21 We're trying to measure  
22 exploitation, and the textbooks  
23 tell you to do it as a share of  
24 marginal revenue product.

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1 BY MR. ISAACSON:

2 Q. So my actual question was --  
3 I understand you're focused on that, but  
4 my question is, did you look at whether  
5 Zuffa actually suppressed actual wages?

6 A. Without controlling for  
7 revenues, no. Because it's incorrect to  
8 do so.

9 Q. So in performing your SSNIP  
10 analysis for the input markets, is it  
11 fair to say that you relied on the record  
12 evidence about the issue of perceived  
13 substitution from the stakeholders along  
14 with your observations that when Zuffa  
15 suppressed fighter wage shares, there  
16 weren't significant defections?

17 A. I think -- I think that  
18 encompasses a lot. I also think that  
19 Zuffa in its ordinary course of business  
20 made use of a FightMetrics (sic)  
21 database. I had -- the very first thing  
22 I did when I -- when I got this case was  
23 I started reading the economic literature  
24 on the MMA industry, and almost every

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1 article I read, the FightMetrics (sic)  
2 database formed the foundation of their  
3 empirical analysis.

4 So I thought that that was a  
5 reasonable place to begin to posit what  
6 the smallest set of fighters that could  
7 be under the control of a hypothetical  
8 monopsony would be in order for it to  
9 exercise market power.

10 Q. All right. Why did you use  
11 the smallest set of fighters not the  
12 smallest amount of promoters?

13 A. Well, because we're looking  
14 at the input market. The fighters form  
15 the elements of the input market. They  
16 happen to belong to promoters, but  
17 fighters are the elements or the  
18 ingredients.

19 But I'm -- if I'm a  
20 fighter -- just to make it clear, if I'm  
21 a fighter and I'm thinking about  
22 substituting, defecting from UFC and  
23 going to a rival promotion, I don't care  
24 what the name of the promotion is or



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1 who's running it or who the chief  
2 matchmaker is, I want to make sure that  
3 I'm going to be put inside of a pool  
4 of -- of fighters such that I have a  
5 prospect of elevating through the ranks.  
6 It's the fighters that determine what a  
7 reasonable substitute is when fighters  
8 are considering defecting.

9 Q. Now, you're not suggesting  
10 that Zuffa used the Fight Matrix data to  
11 define a market, are you?

12 A. Well, you just toggled from  
13 FightMetrics (sic) to Fight Matrix.

14 Q. I'm sorry, FightMetrics  
15 (sic). Sorry. I was bound to do that  
16 today.

17 But you're not suggesting  
18 that Zuffa used FightMetrics (sic) data  
19 to define a market?

20 A. I'm suggesting that firms  
21 are not -- are not employed -- firms are  
22 not in the businesses of defining  
23 relevant product markets as the normal  
24 course of business, right? They're doing

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1 something else. Defining markets is the  
2 task of an antitrust economist.

3 Q. All right.

4 A. But I do think it's  
5 important that Zuffa uses and relies on  
6 the FightMetrics (sic) database in its  
7 ordinary course of business.

8 Q. All right. And is that part  
9 of -- do you consider that -- that  
10 observation that Zuffa relies on the  
11 FightMetrics (sic) database to be part of  
12 your SSNIP analysis?

13 A. I think it undergirds the  
14 conclusion that -- that this is the  
15 relevant set of fighters that would need  
16 to be under the control of a hypothetical  
17 monopsonist so that the wage decrease  
18 below competitive levels would not be  
19 rendered unprofitable.

20 Q. Right. So does your SSNIP  
21 analysis for the input markets consist of  
22 anything other than the things that  
23 you've listed so far: The record  
24 evidence of substitution -- of

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1 perceptions of substitutability from  
2 stakeholders, your observations about how  
3 Zuffa suppressed fighter wage shares  
4 without defections or significant  
5 defections, and Zuffa's reliance on the  
6 FightMetrics (sic) database?

7 MR. CRAMER: Would you like  
8 him to look at his report, is that  
9 what you're asking?

10 MR. ISAACSON: He can look  
11 at his report in answering the  
12 questions. I've allowed him to do  
13 that for every question.

14 MR. CRAMER: Okay, good.

15 THE WITNESS: By looking at  
16 it, it refreshes my memory that in  
17 paragraph 101, for example, I'm  
18 looking at evidence, again from  
19 the perspective of what I call  
20 stakeholders, or mostly fighters,  
21 as to whether or not some -- some  
22 sport outside of MMA would  
23 constitute a reasonable substitute  
24 to defect to in response to a wage

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1 decrease.

2 And we can go through  
3 paragraph-by-paragraph. I don't  
4 know if that's how you want me to  
5 use the time --

6 BY MR. ISAACSON:

7 Q. I thought -- I thought that  
8 as encompassed within the record evidence  
9 of perceptions of substitute billing.

10 A. Right. But why -- I mean, I  
11 wouldn't say why we go by my memory of  
12 what I used, we have the report and we  
13 can go paragraph-by-paragraph and I  
14 can --

15 Q. Your report is long, I'm  
16 trying to see if I can get a summary of  
17 your conclusions with you having access  
18 to your report.

19 MR. CRAMER: So he wants you  
20 to take your time and make sure  
21 that you've adequately summarized  
22 your conclusions and the evidence  
23 upon which they're based.

24 THE WITNESS: Okay.

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1 A. I think revenue and units  
2 were elements of my calculus, yes.

3 Q. All right. You did not look  
4 at the actual amounts charged by the  
5 cable company for the pay-per-view event?

6 A. I think -- I think I agree  
7 with you that in this case I was looking  
8 at it from the perspective of Zuffa.

9 Q. All right.

10 A. Which is the relevant  
11 perspective to determine whether it was  
12 profitable for Zuffa.

13 Q. Well, does the revenue  
14 percentage of Zuffa vary even when the  
15 pay-per-view price remains the same?

16 MR. CRAMER: Incomplete  
17 hypothetical.

18 THE WITNESS: I'm sorry, the  
19 revenue percentage of what?  
20 BY MR. ISAACSON:

21 Q. So you were looking at Zuffa  
22 revenue times pay-per-view units,  
23 correct? I mean, divided by pay-per-view  
24 units.

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1 A. Correct.

2 Q. Correct. And Zuffa's  
3 revenue by pay-per-view would be the  
4 revenue share it gets from the cable  
5 company?

6 A. Correct.

7 Q. Correct? And is it the case  
8 that -- that the revenue share percentage  
9 goes up and goes down irrelevant (sic) to  
10 the price of the actual pay-per-view?

11 MR. CRAMER: Objection to  
12 form.

13 THE WITNESS: And I don't  
14 know. I think that it would all  
15 depend. I would have to think  
16 about it.

17 BY MR. ISAACSON: